Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application. Please cancel claims 33, 40-44, 47-53, 63, and 68-71.

Listing of Claims:

1-86. (Cancelled)

87. (Previously presented) A Doppler ultrasound system for monitoring blood flow, comprising:

an ultrasound transducer having a plurality of ultrasound transducer elements;

an ultrasound pulser circuit operatively coupled to the ultrasound transducer and configured to generate signals to drive a set of elements of the plurality of ultrasound transducer elements to radiate an ultrasound beam;

an ultrasound receiving circuit operatively coupled to the ultrasound transducer and configured to process signals detected from reflections of the ultrasound beam by at least a portion of the plurality of ultrasound transducer elements and generate processed data therefrom representative of reflected signal power of blood flow; and

a computer operatively coupled to the ultrasound pulser circuit and the ultrasound receiving circuit, the computer configured to control the ultrasound pulser circuit to drive different sets of elements of the ultrasound transducer, control the ultrasound receiving circuit to generate processed data for the different sets of elements, and further configured to analyze the processed data for the different sets of elements to determine a window through which blood flow is detected, the window generally defined by a selected one of the sets of elements for which processed data is provided by the ultrasound receiving circuit and operating conditions for the pulser and receiving circuits for the selected set of elements.

88. (Previously presented) The Doppler ultrasound system of claim 87 wherein the ultrasound transducer comprises an ultrasound transducer having an array of triangular shaped ultrasound transducer elements.

89. (Previously presented) The Doppler ultrasound system of claim 88 wherein the ultrasound pulser circuit comprises an ultrasound pulser circuit configured to generate signals to drive groups of six triangular shaped ultrasound transducer elements arranged in a hexagonal shape to radiate an ultrasound beam, and the ultrasound receiving circuit comprises an ultrasound receiving circuit configured to process signals detected from reflections of the ultrasound beam radiated by any of the groups of ultrasound transducer elements and generate the processed data therefrom.

90. (Previously presented) The Doppler ultrasound system of claim 87 wherein the ultrasound transducer comprises an ultrasound transducer having an array of quadrilateral shaped ultrasound transducer elements.

91. (Previously presented) The Doppler ultrasound system of claim 90 wherein the ultrasound pulser circuit comprises an ultrasound pulser circuit configured to generate signals to drive groups of four adjacent quadrilateral shaped ultrasound transducer elements to radiate an ultrasound beam, and the ultrasound receiving circuit comprises an ultrasound receiving circuit configured to process signals detected from reflections of the ultrasound beam radiated by any of the groups of ultrasound transducer elements and generate the processed data therefrom.

92. (Previously presented) The Doppler ultrasound system of claim 87 wherein the computer comprises a computer configured to control the ultrasound pulser circuit to generate the signals driving the set of elements of the plurality of ultrasound transducers to radiate and steer the ultrasound beam by electronically controlling the elements of the set of ultrasound transducer elements, the computer further configured to control the ultrasound receiving circuit to process signals detected from reflections of the ultrasound beam radiated from the electronically controlled elements.

93. (Previously presented) The Doppler ultrasound system of claim 92 wherein the computer is configured to control the ultrasound pulser circuit to generate the signals

driving the set of elements of the plurality of ultrasound transducers to radiate and steer the ultrasound beam by electronically phasing the elements and is further configured to control the ultrasound receiving circuit to process signals detected from reflections of the ultrasound beam radiated from the electronically phased elements.

94. (Previously presented) The Doppler ultrasound system of claim 87 wherein the computer comprises a computer configured to execute a pattern recognition algorithm that determines from the processed data the window through which blood flow is detected.

95. (Previously presented) A Doppler ultrasound system for monitoring blood flow, comprising:

an ultrasound transducer having a plurality of ultrasound transducer elements;

an ultrasound pulser circuit operatively coupled to the ultrasound transducer and configured to generate signals to drive a set of elements of the plurality of ultrasound transducer elements to radiate an ultrasound beam;

an ultrasound receiving circuit operatively coupled to the ultrasound transducer and configured to process signals detected from reflections of the ultrasound beam by at least a portion of the plurality of ultrasound transducer elements and generate processed data therefrom representative of detected blood flow including reflected signal power of the detected blood flow; and

a computer operatively coupled to the ultrasound pulser circuit and the ultrasound receiving circuit, the computer configured to control the ultrasound pulser circuit to drive different sets of elements of the ultrasound transducer, control the ultrasound receiving circuit to generate processed data for the different sets of elements, and further configured to analyze the processed data for the different sets of elements to select one set of elements from which the ultrasound beam is radiated and blood flow is detected.

96. (Previously presented) The Doppler ultrasound system of claim 95 wherein the ultrasound transducer comprises an ultrasound transducer having an array of triangular shaped ultrasound transducer elements.

97. (Previously presented) The Doppler ultrasound system of claim 96 wherein the ultrasound pulser circuit comprises an ultrasound pulser circuit configured to generate signals to drive groups of six triangular shaped ultrasound transducer elements arranged in a hexagonal shape to radiate an ultrasound beam, and the ultrasound receiving circuit comprises an ultrasound receiving circuit configured to process signals detected from reflections of the ultrasound beam radiated by any of the groups of ultrasound transducer elements and generate the processed data therefrom.

98. (Previously presented) The Doppler ultrasound system of claim 95 wherein the ultrasound transducer comprises an ultrasound transducer having an array of quadrilateral shaped ultrasound transducer elements.

99. (Previously presented) The Doppler ultrasound system of claim 98 wherein the ultrasound pulser circuit comprises an ultrasound pulser circuit configured to generate signals to drive groups of four adjacent quadrilateral shaped ultrasound transducer elements to radiate an ultrasound beam, and the ultrasound receiving circuit comprises an ultrasound receiving circuit configured to process signals detected from reflections of the ultrasound beam radiated by any of the groups of ultrasound transducer elements and generate the processed data therefrom.

100. (Previously presented) The Doppler ultrasound system of claim 95 wherein the computer comprises a computer configured to control the ultrasound pulser circuit to generate the signals driving the set of elements of the plurality of ultrasound transducers to radiate and steer the ultrasound beam by electronically controlling the elements of the set of ultrasound transducer elements, the computer further configured to control the ultrasound

receiving circuit to process signals detected from reflections of the ultrasound beam radiated from the electronically controlled elements.

101. (Previously presented) The Doppler ultrasound system of claim 100 wherein the computer is configured to control the ultrasound pulser circuit to generate the signals driving the set of elements of the plurality of ultrasound transducers to radiate and steer the ultrasound beam by electronically phasing the signals driving the elements and is further configured to control the ultrasound receiving circuit to process signals detected from reflections of the ultrasound beam radiated from the electronically phased elements by phasing the detected signals.

102. (Previously presented) The Doppler ultrasound system of claim 95 wherein the computer comprises a computer configured to execute a pattern recognition algorithm that determines from the processed data which set of elements from which the ultrasound beam is radiated and blood flow is detected.

103. (Previously presented) A Doppler ultrasound system, comprising:

an ultrasound transducer having an array of ultrasound transducer elements;

an ultrasound pulser circuit coupled to the ultrasound transducer to drive a selected plurality of the ultrasound transducer elements to deliver an ultrasound beam;

a processing circuit coupled to the ultrasound transducer to process signals detected from reflections of the ultrasound beam by the selected plurality of ultrasound transducer elements and generate Doppler shift data in response thereto representative of blood flow information; and

a computer coupled to the processing circuit to execute a software algorithm that analyzes the Doppler shift data and determines which of the selected plurality of ultrasound transducer elements of the array provide an optimum location from which to deliver ultrasound and detect the signals from reflections of the ultrasound beam to acquire blood flow information.

104. (Previously presented) The Doppler ultrasound system of claim 103 wherein the ultrasound transducer comprises an ultrasound transducer having an array of triangular shaped ultrasound transducer elements.

105. (Previously presented) The Doppler ultrasound system of claim 104 wherein the ultrasound pulser circuit comprises an ultrasound pulser circuit configured to generate signals to drive groups of six triangular shaped ultrasound transducer elements arranged in a hexagonal shape to deliver the ultrasound beam, and the processing circuit comprises a processing circuit configured to process signals detected from reflections of the ultrasound beam delivered by any of the groups of ultrasound transducer elements and generate the Doppler shift data representative of the blood flow information in response thereto.

106. (Previously presented) The Doppler ultrasound system of claim 103 wherein the ultrasound transducer comprises an ultrasound transducer having an array of quadrilateral shaped ultrasound transducer elements.

107. (Previously presented) The Doppler ultrasound system of claim 106 wherein the ultrasound pulser circuit comprises an ultrasound pulser circuit configured to generate signals to drive groups of four adjacent quadrilateral shaped ultrasound transducer elements to deliver the ultrasound beam, and the processing circuit comprises a processing circuit configured to process signals detected from reflections of the ultrasound beam delivered by any of the groups of ultrasound transducer elements and generate the Doppler shift data representative of the blood flow information in response thereto.

108. (Previously presented) The Doppler ultrasound system of claim 103 wherein the computer comprises a computer further configured to control the ultrasound pulser circuit to generate the signals driving the set of elements of the plurality of ultrasound transducers to radiate and steer the ultrasound beam by electronically controlling the elements of the set of ultrasound transducer elements, the computer further configured to control the

processing circuit to process signals detected from the reflections of the ultrasound beam radiated from the electronically controlled elements.

109. (Previously presented) The Doppler ultrasound system of claim 108 wherein the computer is configured to control the ultrasound pulser circuit to generate the signals driving the set of elements of the plurality of ultrasound transducers to radiate and steer the ultrasound beam by electronically phasing the signals driving the elements and is further configured to control the ultrasound receiving circuit to process signals detected from reflections of the ultrasound beam radiated from the electronically phased elements by phasing the detected signals.

110. (Previously presented) The Doppler ultrasound system of claim 108 wherein the processing circuit is further configured to process the signals detected from the reflections of the ultrasound beam radiated from the electronically controlled elements and generate Doppler shift data for a plurality of control conditions representative of blood flow information, and the computer is further configured to analyze the Doppler shift data for the plurality of control conditions to determine an optimum control condition to acquire blood flow information.

111. (Previously presented) The Doppler ultrasound system of claim 103 wherein the computer comprises a computer configured to execute a pattern recognition algorithm that determines from the Doppler shift data which selected plurality of ultrasound transducer elements provide an optimum condition.

112. (Previously presented) In a Doppler ultrasound system, a method of detecting blood flow, comprising:

providing an ultrasound transducer having a plurality of ultrasound transducer elements;

delivering ultrasound from groups of ultrasound transducer elements, each group defining a transmitting group;

analyzing signals detected from reflections of the ultrasound beam at groups of ultrasound transducer elements to determine blood flow information for each of the groups, each group defining a receiving group; and

determining from the blood flow information for each of the transmitting and receiving groups a selected transmitting group and a selected receiving group of ultrasound transducer elements representing an optimum set of ultrasound transducer elements for monitoring blood flow.

113. (Previously presented) The method of claim 112 wherein a receiving group of ultrasound transducer elements at which reflected ultrasound signals are detected is the same as the transmitting group of ultrasound transducer elements from which the ultrasound is delivered.

114. (Previously presented) The method of claim 112 wherein providing the ultrasound transducer comprises providing an ultrasound transducer having an array of triangular shaped ultrasound transducer elements.

115. (Previously presented) The method of claim 114 wherein delivering ultrasound from transmitting groups of ultrasound transducers comprises delivering ultrasound from groups of six triangular shaped ultrasound transducer elements arranged in a hexagonal shape.

116. (Previously presented) The method of claim 112 wherein providing the ultrasound transducer comprises providing an ultrasound transducer having an array of quadrilateral shaped ultrasound transducer elements.

117. (Previously presented) The method of claim 116 wherein delivering ultrasound from transmitting groups of ultrasound transducers comprises delivering ultrasound from groups of four adjacent quadrilateral shaped ultrasound transducer elements.

118. (Previously presented) The method of claim 112, further comprising

electronically controlling the ultrasound transducer elements of a transmitting group to steer the ultrasound beam delivered by the transmitting group of ultrasound transducer elements;

processing signals detected from the reflections of the ultrasound beam radiated from the electronically controlled elements detected by a receiving group to generate processed data representative of detected blood flow and reflected signal power of the detected blood flow for a plurality of control conditions; and

analyzing the processed data for the plurality of control conditions to determine an optimum control condition for detecting blood flow.

119. (Previously presented) The method of claim 118 wherein electronically controlling the ultrasound transducer of a transmitting group to steer the ultrasound beam comprises electronically phasing the signals driving the transducer elements of a transmitting group and wherein processing signals detected from the reflections of the ultrasound beam radiated from the electronically controlled elements comprises processing signals detected from reflections of the ultrasound beam radiated from the electronically phased elements by phasing the detected signals.

120. (Previously presented) The method of claim 112, further comprising executing a pattern recognition algorithm to determine from the blood flow information the optimum location for detecting blood flow.

121. (Previously presented) In a Doppler ultrasound system, a method of determining an optimum window through which blood flow is detected, the method comprising:

selecting a region on a body surface of the patient;

placing on the body surface a single ultrasound probe having a plurality of transducer elements arranged in an array, the array defining a plurality of areas within the region;

administering ultrasound from the ultrasound probe to a first one of the areas;

evaluating a window through the first area;

if the window through the first area is not an optimum window, administering the ultrasound to a second one of the areas, at least a portion of the second area including at least a portion of the first area;

evaluating a window through the second area; and

repeating the administration of the ultrasound to another area if prior areas administered with ultrasound do not substantially include the optimum window, until an area having substantially the optimum window is located.

122. (Previously presented) The method of claim 121, further comprising

electronically controlling the ultrasound transducer elements of a transmitting group to steer the ultrasound beam delivered by the transmitting group of ultrasound transducer elements;

processing signals detected from reflections of the ultrasound beam radiated from the electronically controlled elements detected by a receiving group to generate processed data representative of detected blood flow and reflected signal power of the detected blood flow for a plurality of control conditions; and

analyzing the processed data for the plurality of control conditions to determine an optimum control condition for detecting blood flow.

123. (Previously presented) The method of claim 121 wherein electronically controlling the ultrasound transducer of a transmitting group to steer the ultrasound beam comprises electronically phasing the signals driving the transducer elements of the transmitting group and wherein processing signals detected from the reflections of the ultrasound beam radiated from the electronically controlled elements comprises processing signals detected from reflections of the ultrasound beam radiated from the electronically phased elements by phasing the detected signals.

124. (Previously presented) The method of claim 121, further comprising executing a pattern recognition algorithm to determine from the blood flow information the optimum location for detecting blood flow.